

NO: **R089**

COUNCIL DATE: **May 7, 2012**

REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **May 1, 2012**

FROM: **General Manager, Engineering**

FILE: **5500-15**
XC: **6520-20(SCC)**

SUBJECT: **Implementation of Hydronic Heating and Hot Water Systems in Development Projects in the City Centre**

RECOMMENDATION

The Engineering Department recommends that Council:

1. Receive this report as information;
2. Instruct staff to bring forward the City Centre District Energy Service Area By-law (“the By-law”) that will include, among other things, an opportunity for financial assistance for early adopters of hydronic heating and hot water systems in development projects in the City Centre all as generally described in this report; and
3. Request that staff provide a copy of this report to those who have applications in the review process in City Centre and which will be affected by the By-law when it is adopted.

INTENT

The purpose of this report is to:

- summarize staff’s effort towards encouraging the installation of a hydronic heating and hot water system in the high rise residential development project related to the property at 13286 and 13300 - 104 Avenue;
- describe the key aspects of a recommended City Centre District Energy Service Area By-law that would act to require every new high-density development project in City Centre to install a hydronic heating and hot water system and then to connect that system to the City Centre district energy system; and
- describe the mechanisms available for administering repayable financial assistance to early adopters of the City’s district energy system and make a recommendation in this regard.

BACKGROUND

The applicant related to Development Application No. 7911-0075-00 for a high rise residential development project at 13286 and 13300 - 104 Avenue is currently intent on installing conventional in-suite electric baseboard heating system in the project that will preclude this project from ever connecting to a district energy system.

During its consideration of the subject development application during the Regular Council - Land Use meeting on July 11, 2011, Council resolved as follows:

“That staff work with the applicant to address the challenges standing in the way of the project being designed and constructed so as to allow its future connection to the City Centre District Energy System and provide a report back to Council on the matter.”

At its Regular Council - Land Use meeting on July 25, 2011, Council adopted the recommendations of Corporate Report L005; 2011 (which was submitted by staff in response to the above stated resolution of Council), by which Council introduced an additional requirement that is to be satisfied in advance of final adoption of the Rezoning By-law related to the subject Development Application. Under this requirement the applicant was to provide an estimate to the City of the cost to design a hydronic heating and hot water system for the development project for the purpose of allowing the City an opportunity to decide whether to assist in funding the design and construction of such a system, which would then leave the development in a position of being able to connect to a district energy system. Council further resolved:

“That staff provide a report to Council regarding the outcome of this process in the early fall of this year complete with recommendations, prior to the Rezoning By-law related to the subject development application being forwarded to Council for consideration of final adoption.”

At its Regular Council - Land Use meeting on December 12, 2011, Council considered Corporate Report No. L008; 2011, a copy of which is attached as Appendix I. This report documented the progress that staff had made in relation to addressing the matter of having a hydronic heating and hot water system installed in the subject development application. Staff advised in that report that the installation of a hydronic heating system in the project would result in a capital cost increase of \$3.14 per square foot of building area or a total of \$1,295,000 for the project. This equates to an average of \$2,500 per dwelling unit based on the average floor area for each unit being 800 square feet. Council adopted the recommendations of Corporate Report No. L008, as follows:

“That Council authorize staff to develop a formal policy for consideration by Council that would provide repayable financial assistance by the district energy utility through a partnering agreement with the developer for the purpose of encouraging the installation of hydronic heating and hot water systems in new development projects in City Centre to encourage “early adoption” of such systems in support of the implementation of a District Energy System in City Centre; and

That Council authorize staff to study, evaluate and report on the merits of Council adopting a by-law that would act to require all new development projects in City Centre to install

hydronic heating and hot water systems and then to connect to the City Centre district energy system when such a system is available.”

In Corporate Report Loo8; 2011 staff proposed that to incent “early adopters” the City could consider providing repayable financial assistance through a partnering agreement to the proponents of qualifying projects. Such assistance was proposed at \$1.50 per square foot of the floor area of the dwelling units within the project but in any case limited to no more than 50% of the aggregate difference in the capital cost between the design and installation of a hydronic system and the design and installation of a conventional electric baseboard system.

As noted in the report, staff had discussed the option of providing repayable financial assistance with the applicant of the subject development application to determine whether such assistance would be sufficient to cause them to incorporate a hydronic system into their project. The applicant advised that any additional capital cost burden on their project at this stage would directly impact the viability of the project. The applicant holds the view that the current housing market in the Surrey City Centre is highly sensitive to small increases in unit costs such that their project would not be able to compete with other units currently on the market if the unit costs were to increase.

The applicant has now completed all of the conditions that are precedent to final adoption of the related rezoning by-law and has requested that the by-law be forwarded to Council for final adoption. As noted above, the project is designed with a conventional electric baseboard heating system in each unit. If the related Rezoning By-law is adopted the project will advance to the building permit application process under the current design which would preclude the project from being connected to a district energy system.

DISCUSSION

The viability of the City’s district energy (DE) utility is dependent on the ability of the utility to secure customers. The DE system will be fuelled initially by relatively low cost natural gas boilers which can be commissioned in time to serve the subject development application as well as other nearby future development applications. However, a customer base of sufficient size and energy demand is required to support the investment in an energy facility based on a low-carbon renewable fuel that will lead to significant greenhouse gas (GHG) emission reductions and long-term stability of energy rates for the customers of DE system.

Staff holds the view that the experience with the applicant over the past year, as described above, is representative of what could be expected from other development projects in the area and that it is unlikely that developers of most projects will voluntarily elect to utilize a hydronic heating system and to connect to the City’s DE system, despite the fact that the life cycle costs of the hydronic system connected to the DE system will be lower than the conventional electric system.

Service Area By-law

Given the long term benefits of a DE system to development in City Centre, staff are proposing that every new high density development project in the Surrey City Centre (i.e., that area as illustrated in the map attached as Appendix II) be required to install a hydronic heating and hot water system and to connect to the City Centre DE system as a condition of the issuance of a building permit. This could be accomplished through the adoption of a service area by-law.

The service area by-law would make it compulsory for the following categories of building projects within the defined service area to be designed with a hydronic heating and hot water system such that a connection could be easily installed to a DE system:

- A. Any new building proposed for construction for which the Building By-law requires submission of a building permit application;

or

- B. an existing building where the estimated value of proposed alterations which require submission under the Building By-law of a building permit application is more than the greater of \$250,000 or 100% of the building's latest assessed value according to the records of the British Columbia Assessment Authority.

The service area by-law would also stipulate:

1. the technical performance requirements of the building mechanical systems so that such systems are compatible with the proposed DE system;
2. terms of the service agreement that would apply to each project upon its connection to the DE system; and
3. a proposed DE utility rate schedule.

Financial Assistance

With a view to mitigating some of the additional costs for “early adopters” of hydronic systems in City Centre projects, staff is proposing the service area by-law provide repayable financial assistance to proponents of projects. Such an incentive will not be required as the market shifts to hydronic systems more generally over time. In relation to the financial assistance, staff recommends that up to \$1.50 per sq. ft. of floor area be provided but that such assistance not exceed in any case 50% of the cost premium for a hydronic system over a conventional electric baseboard system. Staff estimates that the \$1.50 per sq. ft. of assistance will reduce the cost premium of the hydronic system to \$1.64 per sq. ft. Given that the current average selling price for high rise residential units within the Surrey City Centre is in the order of \$385 per square foot of floor area, the cost of incorporating a hydronic system in a high rise project represents an increase of less than half a percent (0.43%) of the retail price of the unit. This should not significantly affect the marketability of any particular project.

In fact the marketability of a project could be significantly enhanced through the introduction of a hydronic heating system as follows:

- The project being environmentally friendly through being serviced in the future by a renewable energy source;
- The project being likely to be impacted by future energy cost increases related to electricity and natural gas, which could be significant;
- The project being serviced with hydronic heating, which is considered to be a very high quality option; and
- The project being capable of being further enhanced with radiant in-floor heating with an additional increase in investment.

How to Provide the Financial Assistance

Staff has reviewed a number of different mechanisms for providing the proposed financial assistance. These are discussed in the following sections:

Reduced Development Cost Charges (DCCs): Under this approach the City would reduce the DCC rate for those projects that are connectable to the DE system.

Pros:

- Local governments have the authority to reduce DCCs to achieve a number of objectives, including the reduction of GHGs through the implementation of community energy systems such as DE. Since DCCs represent a significant up-front capital cost to developers, a reduction in DCCs would be an effective means of financial assistance.

Cons:

- The challenge with this approach is that the City needs DCC funding to pay for the services required in support of new development generally and, therefore, based on designation, the amount that DCCs are reduced would have to be funded by the City through other sources, probably general revenue.

Reduced Building Permit Fees: Under this approach the City would reduce the Building Permit fees that are payable for those projects that are connectable to the DE system.

Pros:

- This approach was applied through the City Centre Economic Investment Zone incentive package where building permit fees were reduced by 50% for all qualifying developments.

Cons:

- Staff has reviewed the potential to apply this approach and has found that a 50% reduction in building permit fees would not cover the cost of the proposed financial assistance.
- The fees collected by the Building Division support the work of that Division and to remove those fees would cause their budget to be in deficit.

Neither of the above options is recommended.

Partnering Agreement

Staff has determined that a partnering agreement could be established such that the DE utility could provide repayable financial assistance to the developer of projects that meet the requirements of a DE service agreement (i.e., be designed with hydronic systems and be connectable to the DE system). To enable the use of a partnering agreement, a service area by-law would need to be adopted by the City that would provide financial assistances for development projects that are designated as “early adopters” of DE and on the condition that such “early adopters” enter into a partnering agreement with the DE utility.

The amount of repayable financial assistance that would be available to a development project designated as an “early adopter” would be the lesser of 50% of the aggregate difference in the

capital cost associated with the design and installation of a hydronic system in the project in comparison to the design and installation of a conventional electric system but in any case would not exceed \$1.50 per square foot of the floor area of the dwelling units within the project.

It is further proposed that this repayable financial assistance be available on new development up to a combined total floor area limit of 1,250,000 square feet for all of the qualifying projects. Based on this floor area limit, the DE utility would incur repayable debt up to a maximum of \$1,875,000. The 1,250,000 sq. ft. of floor area represents approximately 1,250 to 1,500 dwelling units or 3 to 5 high rise residential projects. The project related to Development Application No. 7911-0075-00 that is referenced earlier in this report has a floor area of approximately 400,000 sq. ft.

Recapturing the Financial Assistance:

The repayable financial assistance could be amortized in a number of ways. The following table summarizes the advantages and disadvantages of various means of amortization.

Table 2 – Financial Assistance Repayment Options

Repayment Method	Attributes	Rationale	Advantages	Disadvantages
On energy bill through rates to each development.	Utility rates would include amortization costs.	Early adopters bear the burden of higher rates on energy bill rather than on their mortgage payment.	<ul style="list-style-type: none"> • Easy to administer. • Amortized over long period and therefore small payment amount per energy bill. 	<ul style="list-style-type: none"> • Would appear to increase energy rates to end users. • Subject to scrutiny from those not benefitting from early adopters assistance.
Loan tied to strata as suggested by DAC.	The developer would establish a loan to the strata-council equal to the value of the financial assistance provided by the utility, which would be repayable to the DE utility through strata fees.	Repayment is directly linked to the benefitting building.	<ul style="list-style-type: none"> • Could be recovered over a shorter period of time. • Developers could choose to opt out of the financial assistance in favour of not burdening their customers. 	<ul style="list-style-type: none"> • Could be difficult to enforce re-payment of loan. • Might be hard for individual strata members to understand why they are paying additional fees.
Property Tax transfer from early adopter properties.	The City would transfer some of the property tax revenues that are payable by the early adopter projects to the DE utility as a means to repay the costs of the financial assistance provided to the early adopter project.	Early adopters are helping to re-vitalize the community through environmental improvements.	<ul style="list-style-type: none"> • Financial assistance could be recovered over a shorter period of time. • Early adopters would not see any difference in their property taxes, compared to non-DE customers. 	<ul style="list-style-type: none"> • Short term diversion of some property tax revenues. Property taxes for high rise residential development in City Centre are about \$1.00 per sq ft per year.

Based on the above, it is proposed that the repayment of the financial assistance be accomplished by way of a transfer of property tax revenues. In this regard it is proposed that one half of the

general property taxes that are collected on such projects be transferred as repayment to the DE utility to amortize the debt associated with the financial assistance. At this rate of repayment, the debt would be retired over 3 years for a typical project.

Consultation with Stakeholders

All applicants and their architects that have in-stream applications in the City Centre area have been advised that staff are investigating the merits of establishing a DE service area by-law. Staff has only received two comments to date as follows:

- The first respondent cautioned that most commercial buildings require very little heating, if any. The respondent suggested that commercial buildings be excluded from the hydronic heating system requirement and be integrated into the ground-source thermal energy loop so that each project can be provided with the cooling system they require. However, the respondent noted that the financial assistance as proposed is a commendable component of the plan.

Staff are of the opinion that while some commercial buildings are able to make use of waste heat from cooling, this will generally not account for a significant proportion of the heating load of those buildings. The benefits of connecting large commercial buildings to the City's DE system, in terms of efficiency, GHG emission reduction and overall cost savings will outweigh the potential savings from utilization of waste heat from cooling. Further, the utility could be set up in a manner that allows net-metering of heat by accounting for any heat that is directed back into the DE system from any project, which would offset the costs of heating the building or could even be a revenue source for the building.

- Another respondent commented that to require all buildings to connect to the DE system would diminish the competitive advantage for those developers that already incorporate renewable energy alternatives into their buildings.

Development Advisory Committee

On February 23, 2012 the City's Development Advisory Committee (DAC) was consulted regarding the proposed DE service area by-law and financial assistance policy. The DAC had the following comments:

- Some DAC members commented that even a small percentage increase in cost for heating will make a difference on whether or not a developer proceeds with a project and that an increase may cause projects to be delayed or cancelled;
- DAC members asked if the utility is regulated. Staff responded that the utility is regulated by Council similar to the City's sewer, water and solid waste utilities;
- One DAC member commented that they have incorporated DE into a development, but there are challenges. These challenges include:
 - Customers do not see the benefit of a hydronic heating system over cheaper electric baseboards and will not pay the extra costs.
 - The developer is expected to shoulder the cost, which is not feasible or equitable given that the benefit over the long term is to the homeowner.

- Members of the DAC recommended that staff find a way so that the costs for the hydronic technology installation are passed along to the homeowner. There are tools in use such as the City front-ending the costs and recouping through a long term strata lease agreement, which is presently done by security system companies for example. The DAC commented that the City needs to look at these kinds of tools to pass the costs through to the end users so that new development is not missing the opportunity to connect to the DE system in the future.

Next steps

Subject to Council's approval of the recommendations of this report, staff will forward for Council's consideration a Corporate report that will detail a District Energy Service Area By-law including provisions for financial assistance for "early adopters" and will include the By-law on the same agenda for introduction and readings by Council.

Staff is developing a detailed design guideline document for hydronic heating and hot water systems, a formal "application for service" document and promotional materials that will be distributed to developers for consideration in relation to marketing developments in which hydronic systems are installed.

An economic model has been developed for calculating energy rates and DE utility revenue requirements. As capital costs of system infrastructure are confirmed, the economic model will be used to generate a rate schedule, which will be presented for Council's consideration well in advance of the system commencing operation.

With respect to the high rise residential development project at 13286 and 13300 - 104 Avenue (Development Application No. 7911-0075-00) that is nearing final approval, the applicant has recently advised staff that they are prepared to connect their hot water system and common area make-up air system to the DE system but are reticent to convert their in-suite electric baseboard heating system to a hydronic system. However, the development industry more broadly has advised staff that it is important that the City apply all new policies uniformly so that the market competitiveness between projects is maintained. Staff has informed the applicant about the recommendations of this report and that the proposed DE Service Area By-law would be applicable to their project. This means that the project would need to be designed to include both hydronic heating and hot water systems that would be connectable to the DE system and would be eligible for repayable financial assistance as recommended in this report.

SUSTAINABILITY CONSIDERATIONS

The implementation of a district energy system in the City will support the Economic and Environmental Pillars of the City's Sustainability Charter under the following specific elements of the Charter:

- EC8: Energy Security: by promoting the use of low-impact, renewable energy sources and promoting community energy solutions;
- EN1: Energy Efficiency: by incorporating alternative energy systems such as geo-exchange and solar heating systems as potential heat sources; and

- EN10: Integrated Community Energy Master Plans: by developing an Integrated Community Energy Master Plan for the City Centre and by working with property owners to promote and increase building energy efficiency through the connection to a district energy system.

CONCLUSION

Based on the above discussion, it is recommended that Council:

- Instruct staff to bring forward the City Centre District Energy Service Area By-law (“the By-law”) that will include, among other things, an opportunity for financial assistance for early adopters of hydronic heating and hot water systems in development projects in the City Centre all as generally described in this report; and
- Request that staff provide a copy of this report to those who have applications in the review process in City Centre and which will be affected by the By-law when it is adopted.

Vincent Lalonde, P.Eng.
General Manager, Engineering

JO/brb

Appendix I - Corporate Report No. Loo8; 2011
Appendix II - District Energy Service Area Boundary

NO: **L008**

COUNCIL DATE: **December 12, 2011**

REGULAR COUNCIL - LAND USE

TO: **Mayor & Council**

DATE: **December 7, 2011**

FROM: **General Manager, Engineering**

FILE: **7911-0075-00**

SUBJECT: **Implementation of Hydronic Heating and Hot Water Systems in City Centre in Support of the City Centre District Energy System**

RECOMMENDATION

The Engineering Department recommends that Council:

1. Receive this report as information;
2. Authorize staff to develop a formal policy for consideration by Council that would provide repayable financial assistance by the district energy utility through a partnering agreement with the developer for the purpose of encouraging the installation of hydronic heating and hot water systems in new development projects in City Centre to encourage “early adoption” of such systems in support of the implementation of a District Energy System in City Centre; and
3. Request that staff study, evaluate and report on the merits of Council adopting a by-law that would act to require all new development projects in City Centre to install hydronic heating and hot water systems and then to connect to the City Centre district energy system when such a system is available and that this work be done in conjunction with the policy work referenced in recommendation 2. above.

INTENT

The purpose of this report is to advise Council about progress that staff has made in relation to addressing the matter of having a hydronic heating and hot water system installed in the proposed high rise residential development project at 13286 and 13300 - 104 Avenue, which is being processed under Development Application No. 7911-0075-00. Such a system would facilitate the future connection of this project to a district energy system when it is available to this site.

BACKGROUND

During its consideration of the subject development application during the Regular Council - Land Use meeting on July 11, 2011, Council resolved:

“That staff work with the applicant to address the challenges standing in the way of the project being designed and constructed so as to allow its future connection to the City Centre District Energy System and provide a report back to Council on the matter.”

At its Regular Council - Land Use meeting on July 25, 2011, Council considered Corporate Report L005; 2011, a copy of which is attached as Appendix I. Council adopted the recommendation of that report, which introduced an additional requirement that is to be satisfied in advance of final adoption of the Rezoning By-law related to Development Application No. 7911 0075-00 for the lots at 13286 and 13300 – 104 Avenue. Under this additional requirement the applicant was to provide an estimate to the City of the cost to design a hydronic heating and hot water system for the development project, for the purpose of allowing the City an opportunity to decide whether to assist in funding the design and construction of such a system, which would then leave the development in a position of being able to connect to a district energy system in the future. Council further resolved:

“That staff provide a report to Council regarding the outcome of this process in the early fall of this year complete with recommendations, prior to the Rezoning By-law related to the subject development application being forwarded to Council for consideration of final adoption.”

DISCUSSION

Staff has worked with the applicant to establish the cost of constructing a hydronic heating and hot water system as part of the development. The cost estimates as provided by the applicant are summarized in the following tables:

Electric Base Board Heating System (as reported by the applicant)

Item	Cost
In-suite electric base boards heating system	\$175,000
Domestic hot water system	\$60,000
Common area heating system	\$75,000
TOTAL	\$310,000
	\$0.75 per square foot of building area

Hydronic Heating System (as reported by the applicant)

Item	Cost
In-suite hydronic heating system and domestic hot water system	\$1,530,000
Common area heating system	\$75,000
TOTAL	\$1,605,000
	\$3.89 per square foot of building area

Based on the cost estimates as presented, the use of hydronic heating results in a capital cost increase of \$3.14 per square foot of building area or \$1,295,000 for the project, which equates to an average of \$2,750 per dwelling unit (i.e., 850 square feet in area). Although, staff has concerns

that both estimates are on the low side, the difference between the estimates appears to be in the correct range (i.e., \$3.00 to \$3.50 per sq. ft.).

Life Cycle Analysis

Staff has undertaken a financial analysis of the life cycle costs of a hydronic heating system connected to a district energy system in comparison to an electric heating system in a typical high rise residential project. The analysis shows that over the course of a 25-year period and including the cost of energy, the cost to operate and maintain the system and the amortization of capital costs a high rise residential development connected to a district energy system will have a comparable cost of energy to the same development serviced by in-suite electric baseboard heaters with natural gas make up air units and natural gas hot water heaters on the basis of the energy cost projections of the energy providers (B.C. Gas, FortisBC).

Development projects serviced by district energy systems offer the following advantages:

- 1) they emit significantly less greenhouse gases in comparison to developments serviced by natural gas make up air units and natural gas hot water heaters;
- 2) energy sources are flexible to minimize energy costs over time; and
- 3) they gain a significant financial advantage if the cost of electricity and natural gas increases more rapidly than is currently projected.

Individual Suite Metering

The applicant for the proposed high rise residential development project at 13286 and 13300 - 104 Avenue holds the view that individual energy meters in each dwelling unit will be of high value to their potential purchasers to ensure an equitable distribution of energy consumption charges between the dwelling units and to avoid additional monthly costs to investors who choose to sublet their suite. The applicant has estimated that utility-grade thermal energy meters for each suite would add \$1.94 per square foot of building area to the capital cost of the hydronic heating system for this project.

Installing an individual meter for each suite is an extremely expensive item that is not necessary to ensure effective distribution of thermal energy and equitable allocation of costs. Essentially the cost to measure energy consumption for each unit outstrips any significant variances in energy consumption between units. Based on available information related to district energy utilities within Canada there is no example in Canada where a utility has financed or installed meters for individual dwelling units in any high rise residential project.

Repayable Financial Assistance for Early Adopters

In recognition of the higher capital cost of a hydronic heating and hot water system in comparison to the conventional electrical heating and hot water systems and the uncertainty related to the energy costs associated with the district energy system in City Centre, staff is proposing that the City, through its energy utility, consider providing an incentive to encourage the early adoption of hydronic heating and hot water systems in new high rise development in City Centre. The City's district energy utility could provide a capital contribution to "early adopters" to assist in offsetting some of the difference in the capital costs of the hydronic system in comparison to the conventional electric systems. This repayable financial assistance would be

recovered through the energy rates that are charged to the benefitting units by the district energy utility.

Staff is recommending that a formal policy be developed with a view to the City District Energy Utility providing as an incentive to “early adopters” repayable financial assistance through a partnering agreement to qualifying projects of up to \$1.50 per square foot of the floor area of the dwelling units within the project but in any case not exceeding 50% of the aggregate difference in the capital cost between the design and installation of a hydronic system in the project in comparison to the design and installation of a conventional electric system. This repayable financial assistance would be provided to development projects in City Centre on a case-by-case basis to a combined total floor area limit of 1,250,000 square feet for all of the qualifying projects, provided that the requirements for hydronic compatibility as detailed in the partnering agreement are met. A floor area of 1,250,000 sq. ft. equates to approximately 1,500 dwelling units. As a point of reference, the project to which this report has earlier referred has a proposed floor area of approximately 400,000 sq. ft. The repayable financial assistance would only be available to projects in areas that are considered to be within the reasonably foreseeable service boundaries of the City’s district energy utility. The repayable financial assistance would be recovered on an amortized basis through the district energy rates charged to the benefitting projects.

Response from the Applicant

Staff has discussed the proposed policy with the subject applicant to determine the impact that this level of repayable financial assistance would have on their interest in incorporating a hydronic system into their project. The applicant has advised that any additional capital costs on their project at this stage would directly impact the viability of the project. The applicant holds the view that the current housing market in the City Centre is highly sensitive to small increases in unit costs such that their project would not be able to compete with other units currently on the market if the unit costs were to increase further.

Although the proposed policy as recommended in this report may not be of interest to the current applicant, staff holds the view that such a policy may motivate other developers in City Centre to move to district energy as a heat source. On this basis, staff is recommending that Council instruct staff to develop a formal policy in relation to providing repayable financial assistance through a partnering agreement for early adopters of District Energy in City Centre.

Mandating Connections to the District Energy System

The City of Vancouver and the City of North Vancouver each of which have operating district energy systems have put in place a by-law that requires projects in the areas covered by their district energy systems to connect to the district energy system. Neither of these cities provides any repayable financial assistance to offset the additional capital costs. Based on a review of available information, there is no indication that any district energy utility operating within Canada provides any sort of capital repayable financial assistance to help address the capital costs that must be incurred in implementing a hydronic heating and hot water system to allow connection to the district energy system.

It is recommended that staff be requested to study, evaluate and report on the merits of implementing a by-law that would act to require all new development projects in City Centre to

install hydronic heating and hot water systems and to connect to the City Centre district energy system when such a system is available.

Development of Information for the Development Industry

In addition to the above-referenced repayable financial assistance, staff is also working to develop appropriate information for the development community that outlines the advantages that would accrue to projects that are part of the City's district energy system. A copy of this information will be forwarded to Council as information when it is completed and ready for distribution.

Lower DCCs Payable in the Surrey City Centre

Development Cost Charges for multi-family residential projects in the City Centre are approximately 33% lower in comparison to what similar projects are required to pay outside of the City Centre area. As such, the proposed repayable financial assistance for the installation of hydronic heating systems in combination with the lower DCC rates will help to ensure that residential development in the City Centre area will continue to be viable for the developer and affordable for the future home owner.

CONCLUSION

Based on the above discussion, it is recommended that Council:

- Authorize staff to develop a formal policy for consideration by Council that would provide repayable financial assistance by the district energy utility through a partnering agreement with the developer for the purpose of encouraging the installation of hydronic heating and hot water systems in new development projects in City Centre to encourage "early adoption" of such systems in support of the implementation of a District Energy System in City Centre; and
- Request that staff study, evaluate and report on the merits of Council adopting a by-law that would act to require all new development projects in City Centre to install hydronic heating and hot water systems and then to connect to the City Centre district energy system when such a system is available and that this work be done in conjunction with the policy work referenced in recommendation 2. above.

Vincent Lalonde, P.Eng.
General Manager, Engineering

JA/kd/brb

Appendix I: Corporate Report No. L005; 2011

NO: L005

COUNCIL DATE: July 25, 2011

REGULAR COUNCIL - LAND USE

TO: **Mayor & Council**

DATE: **July 20, 2011**

FROM: **General Manager, Engineering**

FILE: **7911-0075-00**

SUBJECT: **Development Application No. 7911-0075-00 – Rezoning and Development Permit for High Rise Residential Project at 13286 and 13300 - 104 Avenue – Hydronic Heating System for Future Connection to a District Heating System**

RECOMMENDATION

The Engineering Department recommends that Council:

1. Receive this report as information; and
2. Approve the process that is outlined in this report as an additional requirement that is to be satisfied in advance of final adoption of Rezoning By-law No. 17460 related to Development Application No. 7911-0075-00 for the lots at 13286 and 13300 – 104 Avenue.

INTENT

The purpose of this report is to advise Council about progress that staff has made in relation to addressing the matter of having a hydronic heating and hot water system installed as part of the high rise residential development project proposed under Development Application No. 7911-0075-00 for the site located at 13286 and 13300 - 104 Avenue. Such a system will facilitate the future connection of the project to a district energy system when it is available to the site.

During its consideration of the subject application at the Regular Council - Land Use meeting on July 11, 2011, Council resolved:

“That staff work with the applicant to address the challenges standing in the way of the project being designed and constructed so as to allow its future connection to the City Centre District Energy System and provide a report back to Council on the matter.”

BACKGROUND

At the Regular Council - Land Use meeting on July 11, 2011, Council considered a Planning Report on the subject application, a copy of which is attached as Appendix I. Included in the report was a summary of efforts made by staff up to that date to convince the applicant to design and implement a hydronic heating system as part of the proposed high rise residential development.

Council raised concerns that adequate efforts had not been made by the applicant to establish the viability of such a system for the development. Council indicated that staff should work with the applicant to further investigate the viability of district energy for the project, to discuss the incentives that may be available to the developer for the project with a view to easing the cost burden that such a system may place on the project and to report back to Council on the outcomes.

The subject development application is scheduled for Public Hearing at the July 25, 2011 Regular Council – Public Hearing meeting.

DISCUSSION

Since the July 11, 2011 Council meeting, staff has worked with the applicant to further review the question of designing and implementing a hydronic heating and hot water system in the proposed 450-unit project that will allow its connection to a district energy system in the future.

The applicant has expressed concern that the installation of such a system would significantly increase the capital cost of the project in comparison to the system that is currently proposed, being electric baseboard heaters. However, as district energy provides benefits for the development's future occupants, staff is of the opinion that it is reasonable for the applicant to make further efforts toward establishing the feasibility of installing a hydronic heating and hot water system as part of the project.

Since the above-referenced Council meeting, the applicant has agreed to provide an estimate to the City of the cost to design a hydronic heating and hot water system as part of the development, for the purpose of allowing the City an opportunity to decide whether to assist in funding the actual design of such an alternative system. When that design estimate is received from the applicant and subject to the estimate being considered reasonable, staff will approve funding to support the applicant's consultants undertaking such a design. When the design is completed, staff will engage a qualified cost consultant to estimate the difference in the cost of installing the hydronic system in the project in comparison to an electric baseboard system. Staff will then use this estimate of the cost difference to work on developing a business case with the applicant to have them proceed with the installation of a hydronic heating and hot water system as part of the project and to develop incentives, if necessary, to assist in achieving such an outcome; for example, the City's district energy utility becoming a funding partner with the applicant to install a hydronic system in the building with recovery of the utility's investment to be achieved through the monthly energy invoices that would be paid by the future owners of the individual units in the project.

The applicant is agreeable to the above-described process. Staff will provide a report to Council regarding the outcome of this process in the early fall of this year complete with recommendations, prior to the Rezoning By-law related to the subject development application being forwarded to Council for consideration of final adoption.

The investment that the City is making in this process is considered to be a reasonable use of funds in that it will result in an expanded base of information for staff to use in relation to the effective implementation of a district energy system in the City Centre area.

City Centre Economic Investment Zone Incentives

During its deliberations on July 11, 2011 regarding the subject application, Council questioned the applicant as to whether he had taken into account in the pro forma for the project the incentives that are available to the project under the City's Economic Investment Action Plan. Although the applicant was not able to answer the question at that time, staff has since learned that the applicant had already taken into account the subject incentives in relation to the project.

CONCLUSION

Based on the above discussion, the Engineering Department recommends that Council approve the process that is outlined in this report as an additional requirement that is to be satisfied in advance of consideration of final adoption of Rezoning By-law No. 17460 related to Development Application No. 7911-0075-00 for the lots at 13286 and 13300 – 104 Avenue.

Vincent Lalonde, P.Eng.
General Manager, Engineering

VL/JA/JO/JR/brb

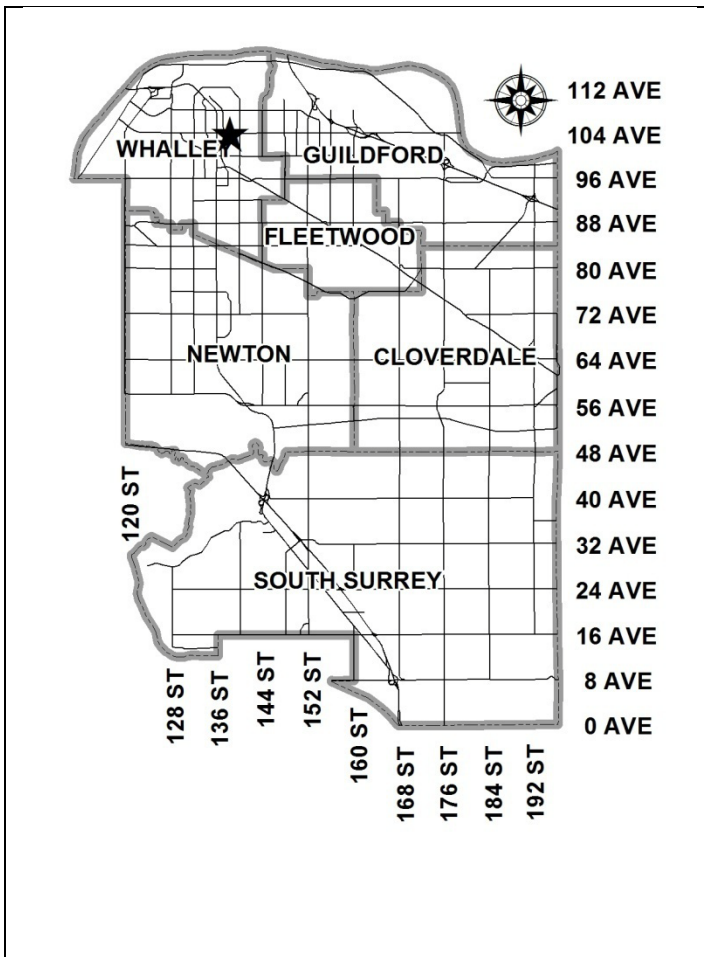
Appendix I - Planning and Development Report Related to Application No. 7911-0075-00

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City of Surrey
PLANNING & DEVELOPMENT REPORT

File: 7911-0075-00

Planning Report Date: July 11, 2011

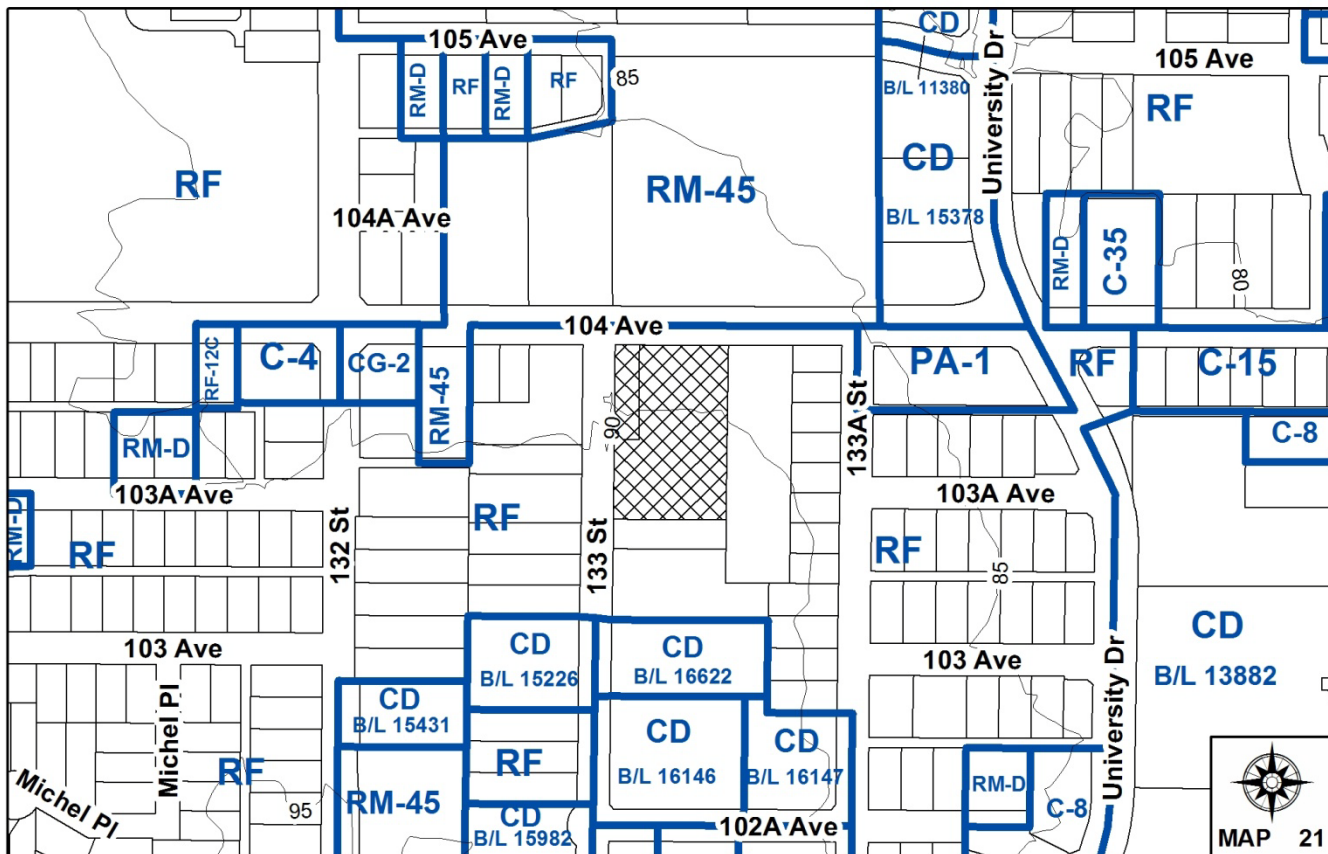


PROPOSAL:

- **Rezoning** from RF to CD (based on RMC-150)
- **Development Permit**

in order to permit the development of a two high-rise apartment towers containing approximately 450 apartment units and 21 ground-oriented units, for a total of 471 units.

LOCATION: 13286 and 13300 – 104 Avenue
OWNERS: Ya-Chiu Lin and Chia-Ta Lin
ZONING: RF
OCP DESIGNATION: Multiple Residential



RECOMMENDATION SUMMARY

- By-law Introduction and set date for Public Hearing for Rezoning.
- Approval to reduce indoor amenity space.
- Approval to draft Development Permit.

DEVIATION FROM PLANS, POLICIES OR REGULATIONS

- None.

RATIONALE OF RECOMMENDATION

- The proposed development complies with the High Rise 5.5 FAR (floor area ratio) designation in the Surrey City Centre Plan Update – Phase II, Stage I Land Use and Density Concept.
- The proposed development supports the intent of the Surrey City Centre Plan to encourage high-rise, high density development near SkyTrain routes. The proposed development is within 400 metres (1/4 mile) of a SkyTrain Station.
- The area will become a higher density residential hub that will be complementary to the City of Surrey Civic Centre to the east.

RECOMMENDATION

The Planning & Development Department recommends that:

1. a By-law be introduced to rezone the subject site from Single Family Residential Zone (RF) (By-law No. 12000) to Comprehensive Development Zone (CD) (By-law No. 12000) and a date be set for Public Hearing.
2. Council approve the applicant's request to reduce the amount of required indoor amenity space from 1,413 square metres (15,209 sq.ft.) to 1,076 square metres (11,582 sq.ft.).
3. Council authorize staff to draft Development Permit No. 7911-0075-00 generally in accordance with the attached drawings (Appendix II).
4. Council instruct staff to resolve the following issues prior to final adoption:
 - (a) ensure that all engineering requirements and issues including restrictive covenants, dedications, and rights-of-way where necessary, are addressed to the satisfaction of the General Manager, Engineering;
 - (b) submission of a subdivision (consolidation) and road dedication plan to the satisfaction of the Approving Officer;
 - (c) submission of an acceptable tree survey and a statement regarding tree preservation;
 - (d) submission of a finalized landscaping plan and landscaping cost estimate to the specifications and satisfaction of the Planning and Development Department;
 - (e) resolution of all urban design issues to the satisfaction of the Planning and Development Department;
 - (f) demolition of existing buildings and structures to the satisfaction of the Planning and Development Department;
 - (g) the applicant to address the concern that the development will place additional pressure on existing park facilities to the satisfaction of the General Manager, Parks, Recreation and Culture Department.
 - (h) the applicant to adequately address the impact of reduced indoor amenity space;
 - (i) registration of a Section 219 Restrictive Covenant to adequately address the City's needs with respect to public art, to the satisfaction of the General Manager, Parks, Recreation and Culture;
 - (j) registration of a statutory right-of-way and public access easement for the proposed internal road to be located along the east property line; and
 - (k) registration of a statutory right-of-way to deal with the interim design of 103 Avenue, to allow for vehicular movement onto the subject site.

REFERRALS

Engineering: The Engineering Department has no objection to the project subject to the completion of Engineering servicing requirements, as outlined in Appendix III.

School District: **Projected number of students from this development:**

15 Elementary students at Old Yale Road Elementary School
6 Secondary students at Kwantlen Park School

(Appendix IV)

The applicant has advised that the first phase for this project is expected to be constructed and ready for occupancy by Summer/early Fall of 2014 and the second phase for Spring/Summer 2015.

Parks, Recreation & Culture: The applicant should resolve the impact the proposed development will have on existing parks, recreation and culture facilities in the neighbourhood.

SITE CHARACTERISTICS

Existing Land Use: One existing house on each of the properties, which will be removed.

Adjacent Area:

Direction	Existing Use	OCP Designation	Existing Zone
North (Across 104 Avenue):	Older, 3-storey apartment buildings.	Multiple Residential	RM-45
East:	Vacant land, part of the Urban Village Master Plan.	Multiple Residential	RF
South:	Vacant land, part of the Urban Village Master Plan	Multiple Residential	RF
West (Across 133 Street):	Existing single family homes on over-sized lots.	Multiple Residential	RF

DEVELOPMENT CONSIDERATIONS

Context - Urban Village Master Plan

- In 2005, Weststone Group began to assemble the properties in the block bound by 102A and 104 Avenues and 133 and 133A Streets in Surrey City Centre.
- Weststone Group was able to assemble all the lots within the block, except for the two lots under this application, at 13286 and 13300 – 104 Avenue.
- Weststone Group assembled the majority of the lands in the subject block in order to develop an integrated, multi-building, high density residential community, referred to as "Urban Village" which Weststone Group intends to build in numerous phases over the next few years. To date, two phases have been constructed just north of 102A Avenue, consisting of two 4-storey apartment buildings (71 units in the phase 1 building and 135 units in the phase 2 building). The third phase (under Application No. 7906-0520-00), consisting of 362 apartment units in a 35-storey high-rise building and 11 ground-oriented units, is under construction three lots to the south of the subject site.

Development Application

- The subject site, at the south-east corner of 104 Avenue and 133 Street, consists of two properties located at 13286 and 13300 – 104 Avenue in the City Centre area. The subject site is approximately 7,113 square metres (1.76 acres) in net area.
- The development site is currently zoned Single Family Residential Zone (RF) and designated Multiple Residential in the Official Community Plan. The site is designated High Rise 5.5 FAR in the Surrey City Centre Plan Update-Phase II, Stage I Land Use and Density Concept, which was approved by Council on February 9, 2009 (Corporate Report No. C001).
- The developer, Rize Alliance, proposes a rezoning from RF to Comprehensive Development Zone (CD) based on the RMC-150 Zone and a Development Permit in order to allow for the development of a total of approximately 471 multiple residential units. The proposed development is to consist of two, 28-storey apartment buildings containing 450 apartment units and 21, 3-storey townhouses units.
- The proposed development will complement Weststone's Urban Village.
- The proposed development is to be completed under two (2) phases and sold as market units. A separate Temporary Commercial Use Permit application for their temporary real estate sales centre (application no. 7911-0135-00) is proposed for the site at the south-west corner of 104 Avenue and 133 Street and is scheduled for consideration by Council on July 11, 2011.
- The proposed unit mix includes 96 studio units, 97 one-bedroom units, 146 one-bedroom and den units, 103 two-bedroom units and 8 three-bedroom units. The proposed 21 townhouse units will each contain two bedrooms.

- The density proposed for the development is a floor area ratio (FAR) of 5.5, which complies with the proposed land use and density designation of High Rise 5.5 FAR reflected in the City Centre Plan Update.
- The proposed development requires a total of 587 parking stalls according to Surrey Zoning By-law requirements, including the 20% parking reduction permitted in City Centre. This consists of 512 resident parking stalls and 75 visitor parking stalls. The development proposes 471 resident parking stalls and 76 visitor parking stalls, which is based upon a standard of 1 stall per dwelling unit and 0.16 stall for visitor parking, which has been approved for other projects in City Centre, as well as the "Ultra" development (Application No. 7906-0520-00), located further south of the subject site. 92 of the proposed 547 stalls are proposed to be small car spaces. All parking will be provided in four (4) levels of underground parking.
- The development is required to provide 565 bicycle parking spaces. The development proposes 604 bicycle spaces for the two towers, 424 bicycle parking spaces for Phase I and 180 bicycle spaces for Phase II.

Proposed CD By-law

- The proposed CD Zone is based upon the Multiple Residential Commercial 150 Zone (RMC-150), with modifications to land use, density and building setbacks.
- Unlike the RMC-150 Zone, which permits multiple unit residential buildings and a wide range of commercial uses, the permitted land uses in the proposed CD Zone will be restricted to multiple residential uses only.
- The proposed floor area ratio (FAR) of the development will be 5.5, which will exceed the maximum density permitted under the RMC-150 Zone, which would be a 3.5 FAR. However, the proposed density complies with the High Rise 5.5 FAR designation in the Surrey City Centre Plan Update – Phase II, Stage I Land Use and Density Concept.
- The RMC-150 Zone requires the setbacks to be a minimum of 50% of the building height. The proposed buildings are 87 metres (285 ft.) in height, which would result in setbacks of 43.5 metres (143 ft.). The building setbacks vary from the RMC-150 Zone as follows: 4.1 metres (13 ft.) from 104 Avenue; 8.5 metres (28 ft.) from the south (proposed 103 Avenue); 3.6 metres (12 ft.) from 133 Street; and 2.5 metres (8 ft.) from the east (measured from the edge of the statutory right-of-way). The reduction in building setbacks is supportable as the reduced setbacks allow for more engagement of the streets and provides for more of an urban feeling, which is desirable for the City Centre area.

Public Art Policy

- The applicant has been made aware of the City's new Public Art Policy requirements. However, the applicant has not yet indicated how they wish to address this requirement. The applicant will be required to resolve this requirement prior to Final Adoption.

Trees Preservation and Replacement and Landscaping

- An arborist assessment has been submitted by the applicant. The arborist report was prepared by Ken Bell, Certified Arborist of VanArbor Vegetation Consulting Ltd. 25 on-site trees consisting of 6 Cottonwoods, 1 Alder and 18 other tree species have been identified within the development site. 6 off-site trees consisting of 2 Lombardy Poplar and 4 Douglas Fir have also been identified.
- All trees are proposed to be removed as the development proposal incorporates an underground parking structure within the boundaries of the development site, making it difficult for trees to be retained over a concrete slab structure.
- The applicant proposes approximately 77 replacement trees throughout the proposed development. Based upon the proposed tree removal, the applicant would only be required to provide a 1:1 replacement ratio for the 6 Cottonwood and 1 Red Alder trees and a 2:1 ratio for all the other trees (18 trees) proposed for removal within the site for a total requirement of 43 replacement trees.

Statutory Right-of-Way and 103 Avenue

- The proposed development incorporates a private roadway in a statutory right-of-way along the east property line. The internal roadway, with a 12.0-metre (39 ft.) right-of-way, will be privately owned, but will allow for public access between 103 and 104 Avenues. The private roadway will only permit right in/right out access from 104 Avenue. Ultimately, when the property to the east proceeds forward for development, a wider extension of this roadway can be achieved.
- Proposed 103 Avenue is intended to provide a connection from 132 Street to 138 Street.
- However, as redevelopment of the property to the south of the subject site is not proceeding forward at this time, only the portion of 103 Avenue falling within the subject site can be achieved at this time due to the curved design of the road. The majority of the ultimate road allowance falls on the property to the south and will be achieved when this property develops.
- Since the applicant wishes to access this road now, the applicant has proposed to construct an interim 103 Avenue, which will allow for vehicular flow on the subject site. A portion of the interim 103 Avenue will be constructed on the subject site, within a statutory right-of-way. When development of the property to the south proceeds, the ultimate design for 103 Avenue will be constructed and the statutory right-of-way on the subject site can be discharged.

District Energy (DE)

- In order to help meet the objectives of the Surrey Sustainability Charter, greenhouse gas emission targets set out in the OCP and various broader economic development goals, Council established Surrey City Energy to develop, own and operate a district energy utility.
- The proposed development falls within one of Surrey City Energy's district energy (DE) service areas and represents a considerable portion of the projected future demand for thermal energy, as identified in the Surrey Central DE Feasibility Study.

- Beginning in February 2011, staff made efforts to work with the applicant to facilitate the design and implementation of a hydronic heating system that would be compatible to district energy. Staff recently requested that the applicant prepare and tender an alternative hydronic design of the heating and hot water systems, which would be funded by Surrey City Energy, in order to quantify the additional costs of DE compatibility for this project and for future buildings in the service area.
- The developer feels that he has attempted to accommodate City staff's request, but he is unable to prepare and tender an alternative hydronic design of the heating and hot water systems due to the time required to complete this work as the developer wishes to proceed to the July 11, 2011 Council meeting due to established construction timelines. The developer also feels that the alternative hydronic design could result in additional capital costs and that these costs could increase the price of their dwelling units. Due to these reasons, the developer has elected to use electric baseboard heaters. Although the developer has concern about additional capital costs, staff were planning to work with the developer to overcome this concern upon completion of the requested alternative hydronic design. The elected system of using electric baseboard heaters precludes any future connection to district energy.
- Staff will continue to address the barriers perceived by the development community, to deviating from the standard heating and hot water systems in order to build a DE compatible building. As this work evolves, further recommendations will be made to Council.

PRE-NOTIFICATION

Pre-notification letters were mailed on May 19, 2011. Only one caller contacted staff to inquire about the tenancy of the proposed development, as the owner was concerned that the project would be a rental development. Staff advised the caller that the proposal was for market housing. However, once a Strata Council is formed, it would then be up to the strata to determine the limitations of rental units within the development.

DESIGN PROPOSAL AND REVIEW

- The proposal incorporates two high-rise towers, each at 28 storeys in height, and ground-oriented townhouses that are 3 storeys in height.
- Phase I of the proposed development incorporates Tower A (closest to the new 103 Avenue) and ten (10) of the proposed townhouse units. Phase II will incorporate Tower B (closest to 104 Avenue) and the remaining eleven (11) townhouse units.
- The proposed towers are offset from one another to maximize views to the north and to create internal open space. Proposed Tower A is to be located at the corner of 133 Street and the new 103 Avenue. Proposed Tower B marks the corner of the new internal roadway and 104 Avenue, along the east property line.
- According to the architect, the two proposed tower forms are organic in design with undulating balcony curves that reference wind, water and schools of fish. The major expression is the wave form that shifts between two types of floor plates all the way up the towers, resulting in a strong and playful form. The wave form balconies provide a dual function, solar shading to the south,

southwest and southeast orientations, in addition to providing large exterior open space for the residents.

- The towers are supported by a linear townhouse base that includes vertical bays and glassy main entries. The tower expression on one side of the townhouse units reaches grade to provide a vertical expression of the tower at street level. The bronze colour, metal clad townhouses are ground-oriented with punched windows, garden entrances, small scale detail both inviting to passing pedestrians and interesting to motorists. The townhouses are to differentiate between the glassy towers by creating a more solid looking base with different character of window detailing and materials.
- The tower materials include 2 colours of low E glass, elastometric painted concrete, window walls and a cut out metal panel roof at the penthouse level to provide sun shading to the south facing common area roof deck. The townhouses are comprised of bronze coloured metal panels, glass and wood detailing at the garden entries.
- The proposed typical tower floor plate is a maximum of 675 square metres (7,266 sq.ft.), resulting in a slimmer tower profile.
- A single vehicular access to the underground parking structure is to come from the internal private roadway located along the east property line.

Landscaping and Outdoor Amenity Space

- Based upon the City's Zoning By-law requirements of 3.0 square metres/32 sq.ft. per unit for outdoor amenity space, the proposed development is required to provide 1,413 square metres (15,072 sq.ft.) in outdoor amenity space. The development proposes 1,511 square metres (16,264 sq.ft.) of outdoor amenity space, which includes a children's playground, landscaped seating areas, herb garden, urban agriculture planting beds, patios and roof decks.
- The main common outdoor amenity space which separates the two towers is to be completed under Phase II, although each phase will incorporate its own indoor amenity space.
- The proposed outdoor amenity spaces will include a children's playground, landscaped seating areas, herb garden, urban agriculture plots and amenity space patio areas. Roof top amenity areas are proposed at the top of both towers.
- The landscape design concept mirrors the wave form of the towers, with undulating pathways through the site, curved seating walls.
- An herb display garden along with urban agriculture plots are proposed along the east side of the development, along the new internal roadway.

Indoor Amenity Space

- Based upon the City's Zoning By-law requirement of 3.0 square metres/32 sq.ft. per unit for indoor amenity space, the proposed development is required to provide 1,413 square metres (15,072 sq.ft.) of indoor amenity space.

- The development proposes 1,076 square metres (11,582 sq.ft.) of indoor amenity which is planned to include a bike maintenance room, a residents' workshop and tool crib, car wash, dog wash, an entertainment area, exercise rooms, meeting rooms and libraries. The proposed residents' workshop and tool crib with tool storage, will incorporate work benches and allow for workshop ventilation. The proposed library areas are to be located at the main floors of the two residential towers, which will offer areas for a book club or other quiet uses.
- The applicant will be required to provide cash-in-lieu of indoor amenity space for the shortfall in indoor amenity space, which is \$117,600, based upon \$1,050 per unit for a deficiency of 112 units.

SUSTAINABILITY FEATURES

- The proposed development will attempt to incorporate the following sustainability features:

Site

- Best practices implemented to minimize erosion and sedimentation during demolition, site preparation and throughout construction.
- Roof gardens and at grade gardens will enhance the development's livability for residents.
- Landscaping will utilize drought-resistant local varieties of planting.
- Densifying an existing urban site close to amenities and transit.

Water

- Low flow/low flush plumbing fixtures.
- On-site detention of water to slow down the discharge into the municipal system and potential use for irrigation.

Energy

- Ozone-friendly refrigerants will be selected for building HVAC systems.
- High performance envelope including Low-E glass.
- Large overhangs on the south, southwest and southeast provide solar shading to high heat gain areas of the plan.

Materials

- Use of high fly-ash content concrete to reduce the development's CO₂ footprint.
- Use of recycled content in major building materials such as concrete, rebar, aluminum, drywall and steel studs.
- Use of construction waste management diversion program to reduce the impact on landfill and incineration.

Environmental Quality

- Use of Low VOC (volatile organic compound) finishes including adhesives, sealants and paints.
- Use of low emitting materials such as carpets and composite woods.
- Best practices will be implemented during construction to optimize air quality and provide a clean and healthy building, both for construction workers and future residents.

Innovation in Design

- Development of a Green Clean program for building maintenance.

ADVISORY DESIGN PANEL

ADP Date: June 2, 2011

The majority of the design items have been resolved, with the exception of some drawing coordination, landscaping, grading, finishing and mechanical issues, which the applicant has agreed to resolve prior to Final Adoption.

INFORMATION ATTACHED TO THIS REPORT

The following information is attached to this Report:

Appendix I.	Lot Owners, Action Summary and Project Data Sheets
Appendix II.	Proposed Site Plan, Building Elevations, Landscape Plans and Perspective
Appendix III.	Engineering Summary
Appendix IV.	School District Comments
Appendix V.	ADP Comments
Appendix VI.	Proposed CD By-law

INFORMATION AVAILABLE ON FILE

- Complete Set of Architectural and Landscape Plans prepared by IBI/HB Architects and Durante Kreuk Ltd. Landscape Architects, respectively, dated June 29, 2011.

original signed by Judith Robertson

Jean Lamontagne
General Manager
Planning and Development

PL/kms

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Information for City Clerk

Legal Description and Owners of all lots that form part of the application:

1. (a) Agent: Name: Colleen Dixon, IBI/HB Architects
 Address: Suite 700, 1285 West Pender Street
 Vancouver, BC V6E 4B1

 Tel: 604-683-8797 (Work)
 604-683-8797 (Home)

2. Properties involved in the Application
 - (a) Civic Address: 13286 - 104 Avenue and 13300 104 Avenue

 - (b) Civic Address: 13286 - 104 Avenue
 Owner: Ya-Chiu Lin
 PID: 011-426-187
 Lot 6, Except: part Dedicated Road on Plan LMP18314, Section 27 Block 5 North Range 2
 West New Westminster District Plan 9655

 - (c) Civic Address: 13300 104 Avenue
 Owner: Chia-Ta Lin
 PID: 010-074-538
 Lot 8 Except: Part Dedicated Road on Plan LMP18314, Section 27 Block 5 North Range 2
 West New Westminster District Plan 15335

3. Summary of Actions for City Clerk's Office
 - (a) Introduce a By-law to rezone the property.

DEVELOPMENT DATA SHEET

Proposed Zoning: CD (based upon RMC-150)

Required Development Data	Minimum Required / Maximum Allowed in RMC-150 Zone	Proposed
LOT AREA* (in square metres)		
Gross Total		7,601 m ²
Road Widening area		488 m ²
Undevelopable area		
Net Total		7,113 m ²
LOT COVERAGE (in % of net lot area)		
Buildings & Structures	33%	32%
Paved & Hard Surfaced Areas		22%
Total Site Coverage		54%
SETBACKS (in metres)		
Front (104 Avenue)	50% of the height of the building (43.5 metres)	4.1 m
Rear (103 Avenue)	50% of the height of the building (43.5 metres)	8.5 m
Side #1 (133 Street)	50% of the height of the building (43.5 metres)	3.6 m
Side #2 (East)	50% of the height of the building (43.5 metres)	2.5 m
BUILDING HEIGHT (in metres/storeys)		
Towers	N / A	28 storeys/87 metres
Townhouses		3-storeys/10 metres
Accessory		
NUMBER OF RESIDENTIAL UNITS		
Bachelor		96
One Bedroom		97
One Bedroom and Den		146
Two-Bedroom		103
Two-Bedroom Townhouse		21
Three-Bedroom +		8
Total		471
FLOOR AREA: Residential		
		37,748 m ²
FLOOR AREA: Commercial		
Retail		N/A
Office		
Total		
TOTAL BUILDING FLOOR AREA		
		37,748 m ²

** If the development site consists of more than one lot, lot dimensions pertain to the entire site.*

Development Data Sheet cont'd

Required Development Data	Minimum Required / Maximum Allowed in RMC-150 Zone	Proposed
DENSITY		
# of units/ha /# units/acre (gross)		
# of units/ha /# units/acre (net)		
FAR (gross)		
FAR (net)	3.5	5.5
AMENITY SPACE (area in square metres)		
Indoor	1,413 m ²	1,076 m ²
Outdoor	1,413 m ²	1,511 m ²
PARKING (number of stalls)		
Commercial		N/A
Industrial		N/A
Residential		
Bachelor + 1 Bedroom	353	339
2-Bed	149	124
3-Bed	10	8
Residential Visitors	75	76
Institutional		N/A
Total Number of Parking Spaces	587	547
Number of disabled stalls	6	17
Number of small cars	147	92
Tandem Parking Spaces: Number / % of Total Number of Units		N/A
Size of Tandem Parking Spaces width/length		N/A

Heritage Site	NO	Tree Survey/Assessment Provided	YES
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DRAWING LIST

A-000 COVER SHEET AND DRAWING LIST	N.T.S.
A-001 INFORMATION SHEET	N.T.S.
A-001a ROAD DEDICATION DIAGRAMS	N.T.S.
A-002 SITE PLAN	1:200
A-002a SITE PLAN	1:200
A-003 SITE PHOTOS	N.T.S.

Plans

A-101 PARKING LEVEL P4	1:200
A-102 PARKING LEVEL P2 AND P3	1:200
A-103 PARKING LEVEL P1	1:200
A-104 GROUND FLOOR PLAN	1:200
A-105 LEVEL 2 FLOOR PLAN	1:200
A-106 LEVEL 3 FLOOR PLAN	1:200
A-107 TYPICAL FLOOR PLAN	1:200
A-108 LEVEL 27 FLOOR PLAN	1:200
A-109 LEVEL 28 FLOOR PLAN	1:200
A-110 ROOF PLAN	1:200

ELEVATIONS

A-201 NORTH ELEVATION	1:200
A-202 WEST ELEVATION	1:200
A-203 SOUTH ELEVATION	1:200
A-204 WEST ELEVATION	1:200
A-211 RENDERINGS	N.T.S.

SECTIONS

A-301 BUILDING SECTION A	1:200
A-302 BUILDING SECTION B	1:200
A-303 BUILDING SECTION C	1:200
A-304 BUILDING SECTION D	1:200

LANDSCAPE DRAWINGS

L1 GROUND LEVEL LANDSCAPE	1:200
L2 ROOF LEVEL LANDSCAPE	1:200
L3 SECTIONS	1:200
L4 MATERIALS IMAGES	N.T.S.
L5 PLANTING IMAGES	N.T.S.

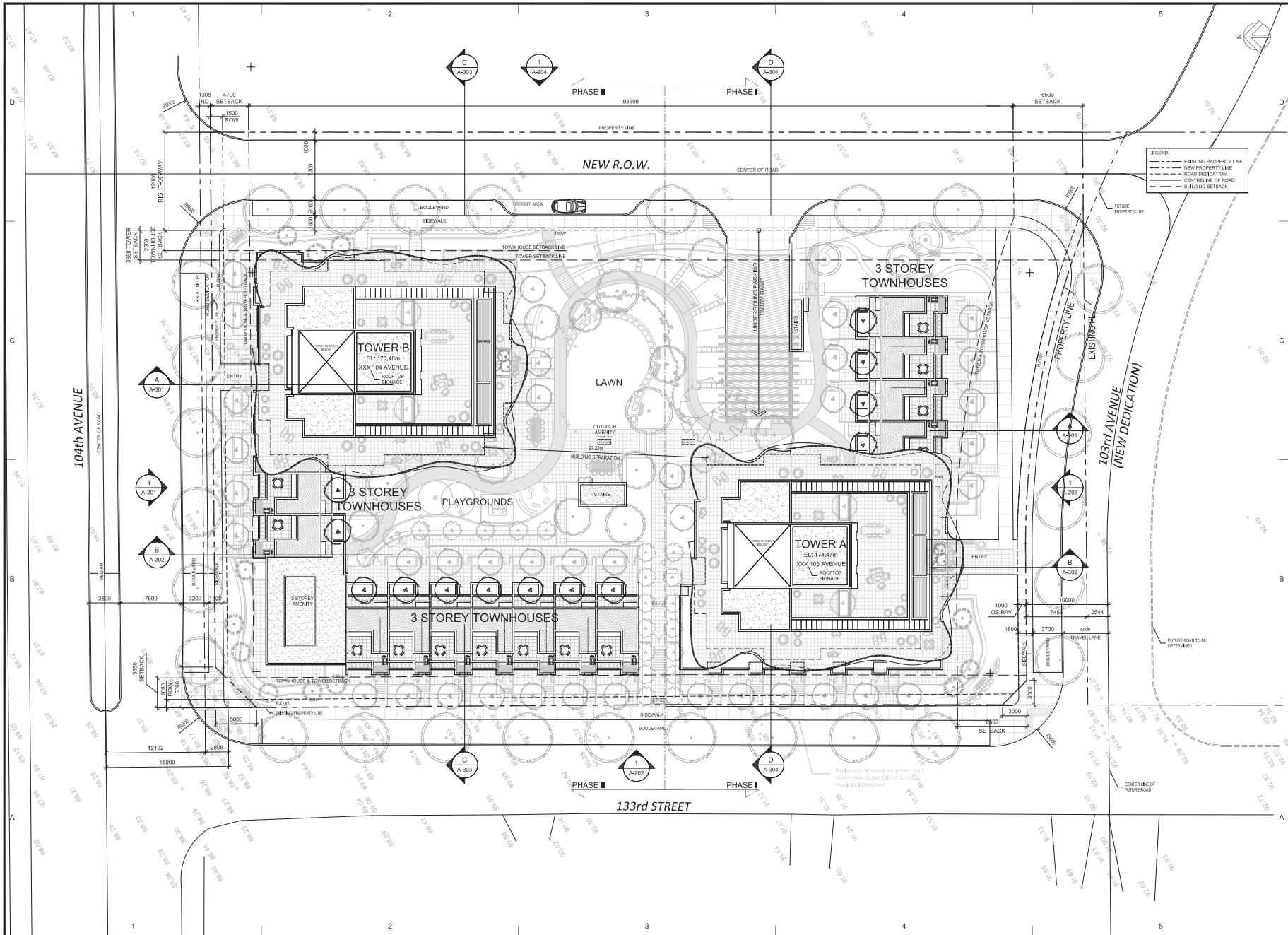


104 Ave & 133 Street



IBI Architects
720 - 1285 West Pender Street
Vancouver BC V6E 4B1 Canada

tel 604 683 8797
fax 604 683 0492



CLIENT

Rize

Recording Drawings for:
104 Avenue & 133 Street
104 Avenue & 133 Street, Surrey, BC

Prepared for:
Rize Alliance Properties Ltd,
Suite 2024 - 1055 Dunsford Street

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NO.	DATE	DESCRIPTION
00	2011-06-29	Issued for Recording
04	2011-06-21	Response to ADP Comments
03	2011-05-26	Issued for Advisory Design Panel
02	2011-06-21	Issued for Development Permit
01	2011-03-20	Issued for Planning

NO.	DATE	APPR	DESCRIPTION
REVISIONS			
SEAL			
SUB-CONSULTANT			
PRIME CONSULTANT			

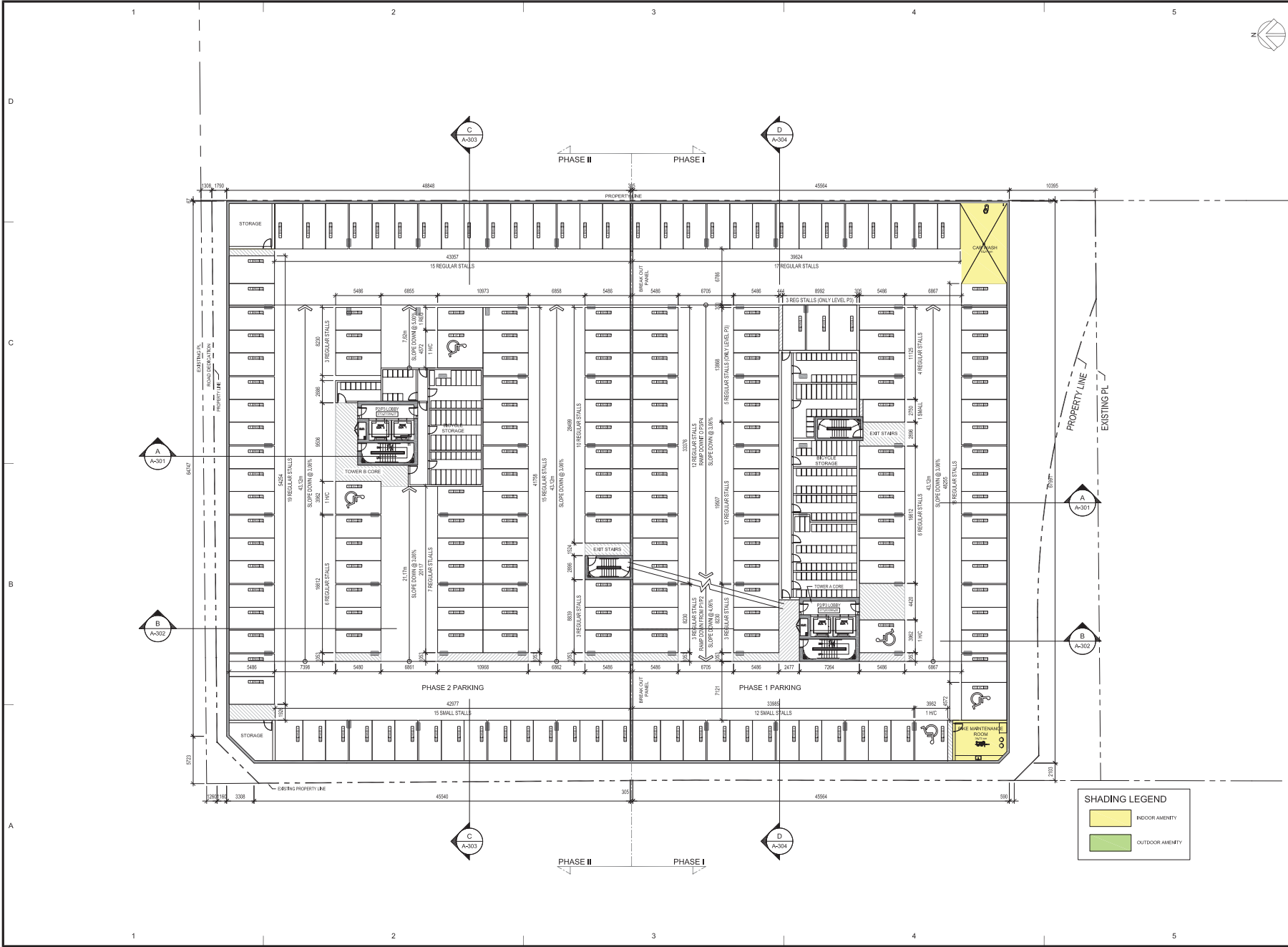
PROJECT TITLE
104 Ave & 133 Street
Project Address

PROJECT NO.: 29544
DRAWN BY: IBI
CHKD BY: CD
SCALE: 1:200
DATE: 2011-06-29

SHEET TITLE
SITE PLAN

SHEET NUMBER
A-002

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 Date: 2011-06-29, 10:47:54 AM
 Author: IBI Group Inc.



Recording Drawings for
104 Avenue & 133 Street
104 Avenue & 133 Street, Surrey, BC

Prepared for
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02	2011-06-21	Issued for Development Permit
01	2011-03-20	Issued for Recording

NO.	DATE	APPR.	DESCRIPTION

NO.	DATE	APPR.	DESCRIPTION

NO.	DATE	APPR.	DESCRIPTION

PRIME CONSULTANT
TBI
TBI ARCHITECTURE
1004 - 1500 West Broadway Street
Vancouver BC V6E 4B7 Canada
Tel: 604 683 8707
Fax: 604 683 9062

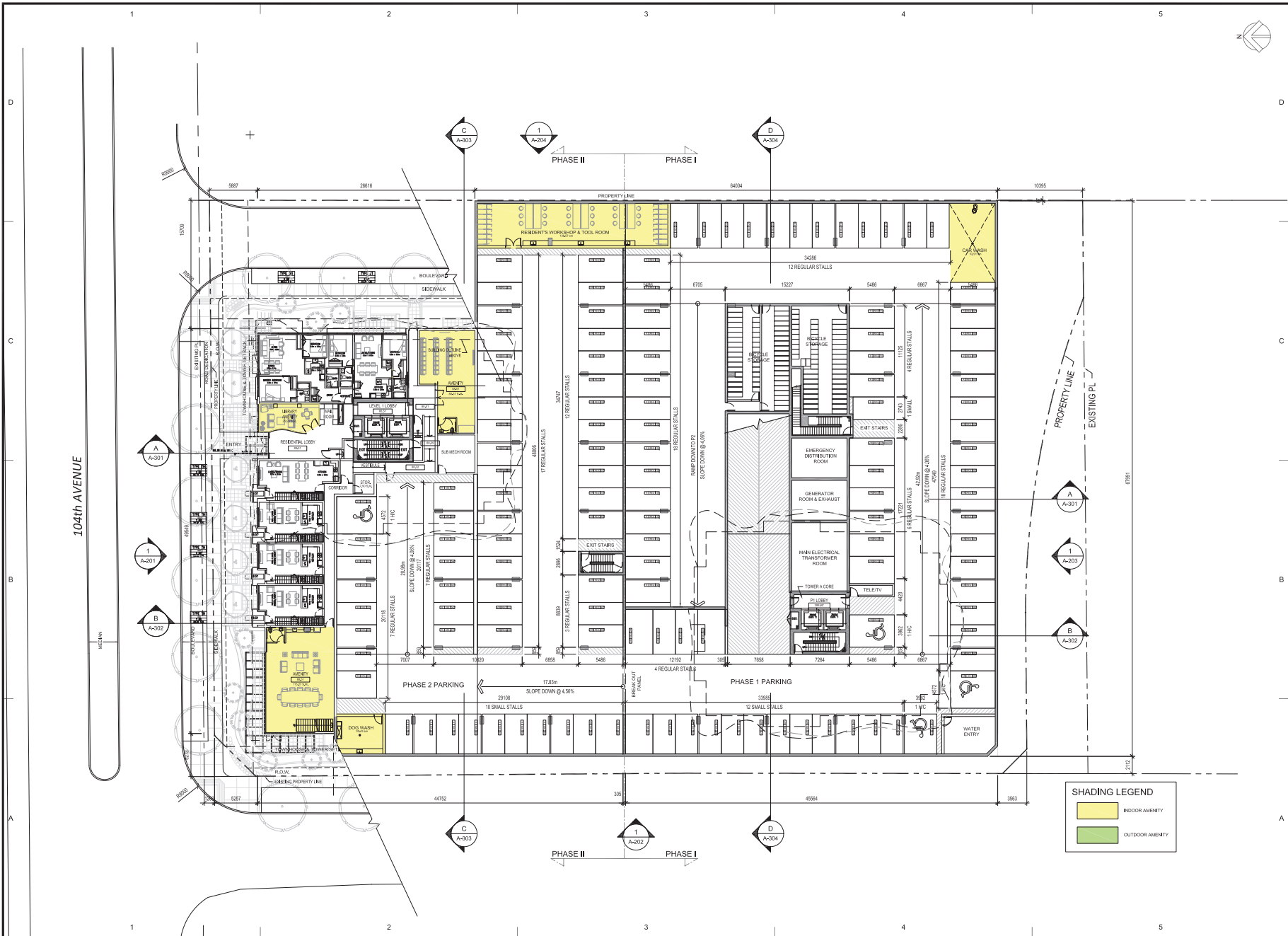
PROJECT TITLE
104 Ave & 133 Street
Project Address

PROJECT NO.: 20544
DRAWN BY: TBI
CHK'D BY: CD
SCALE: 1:200
DATE: 2011-06-29

SHEET TITLE
PARKING LEVEL P2 AND P3

SHEET NUMBER	REV.
A-102	---

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 104 Avenue & 133 Street
 104 Avenue & 133 Street, Surrey, BC
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04	2011-05-21	Response to ADP Comments
03	2011-05-20	Issued for Advisory Design Panel
02	2011-04-21	Issued for Development Permit
01	2011-03-20	Issued for Recording

NO.	DATE	APPR.	DESCRIPTION

NO.	DATE	APPR.	DESCRIPTION

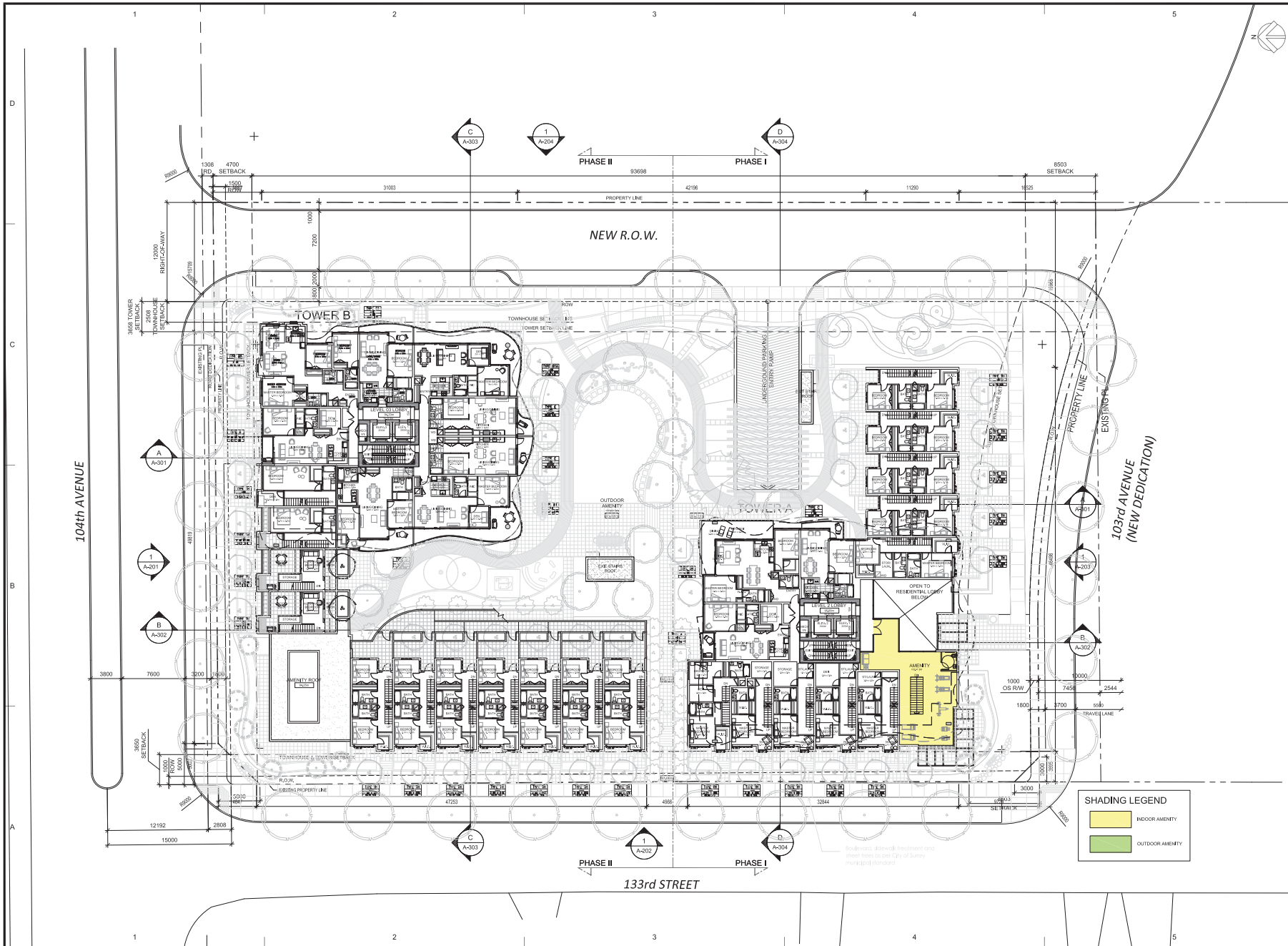
PRIME CONSULTANT
TBI
 10480 Acton Road
 200-1100 West Fraser Street
 Vancouver BC V6E 4E1 Canada
 Tel: 604 683 9787
 Fax: 604 683 9682

PROJECT TITLE
104 Ave & 133 Street
 Project Address
 PROJECT NO: 23454
 DRAWN BY: TBI
 CK'D BY: CD
 SCALE: 1/16" = 1'-0"
 DATE: 2011-06-29

SHEET TITLE
PARKING LEVEL P1

SHEET NUMBER
A-103
 REV: ---

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 104 Avenue & 133 Street, Surrey, BC

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04	2011-06-21	Response to ADP Comments
03	2011-05-26	Issued for Advisory Design Panel
02	2011-06-21	Issued for Development Permit
01	2011-03-02	Issued for Recording

NO.	DATE	APPR	DESCRIPTION
REVISIONS			

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SUB-CONSULTANT

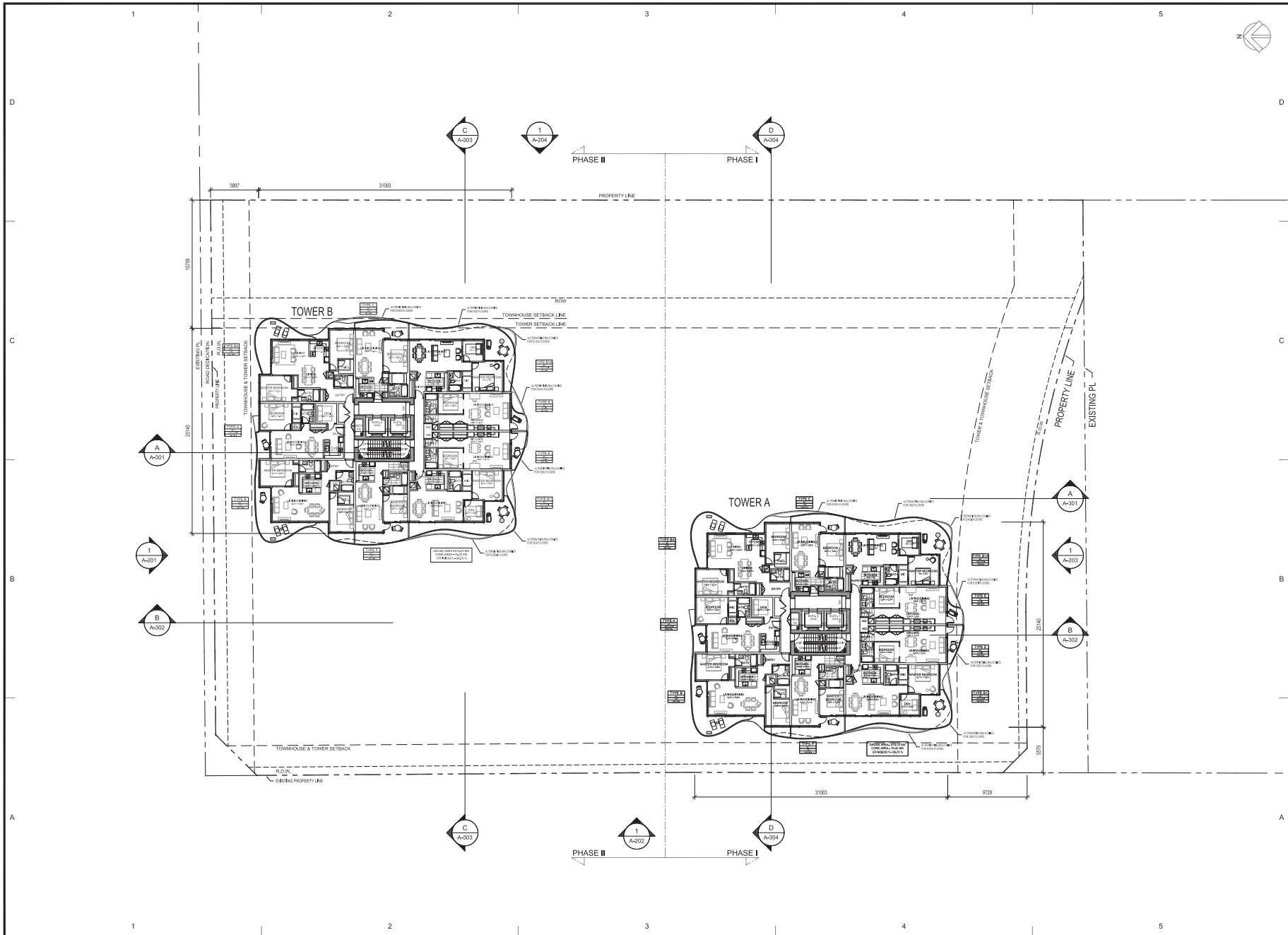
PRIME CONSULTANT

PROJECT TITLE
104 Ave & 133 Street
 Project Address

PROJECT NO: 25454
 DRAWN BY: BIL
 CHECKED BY: CD
 SCALE: 1:200
 DATE: 2011-06-29

SHEET TITLE
LEVEL 2 FLOOR PLAN

SHEET NUMBER	REV
A-105	---



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Rize

Recording Drawings for
104 Avenue & 133 Street
104 Avenue & 133 Street, Surrey, BC

Prepared for
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Suite 3034 - 1055 Durnham Street

DATE: 2011-09-29

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03	2011-05-26		Issued for Advisory Design Panel
02	2011-06-21		Issued for Development Permit
01	2011-03-02		Issued for Recording

REVISIONS

NO.	DATE	APPR.	DESCRIPTION

SEAL

SUB-CONSULTANT

PRIME CONSULTANT

IBI GROUP

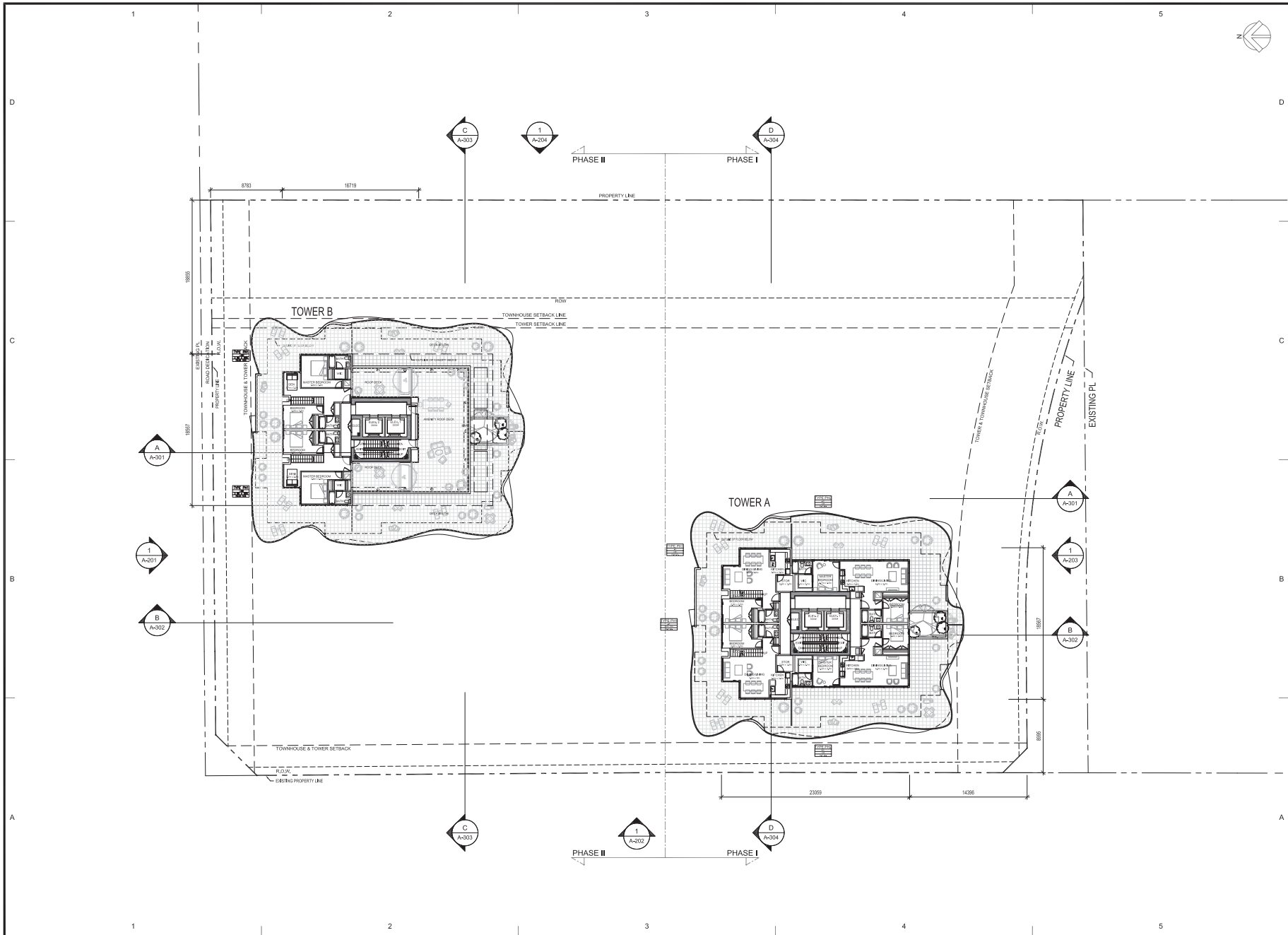
IBI GROUP Architects
1004 - 1350 West Pender Street
Vancouver BC V6E 4B1 Canada
Tel: 604 683 8787
Fax: 604 683 9962

PROJECT TITLE
104 Ave & 133 Street
Project Address

PROJECT NO.: 29454
DRAWN BY: IBI
CHK'D BY: CD
SCALE: 1/200
DATE: 2011-09-29

SHEET TITLE
TYPICAL FLOOR PLAN

SHEET NUMBER	REV.
A-107	---



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 104 Avenue & 133 Street, Surrey, BC
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02	2011-06-21	Issued for Development Permit
01	2011-03-20	Issued for Recording

NO.	DATE	DESCRIPTION

NO.	DATE	APPR.	DESCRIPTION

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SUB-CONSULTANT

PRIME CONSULTANT

PROJECT TITLE
104 Ave & 133 Street
 Project Address

PROJECT NO: 28454
 DRAWN BY: IBI
 CHK'D BY: CD
 SCALE: 1/200
 DATE: 2011-06-29

SHEET TITLE
LEVEL 27 FLOOR PLAN

SHEET NUMBER
A-108

REV: ---

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